

AMENDMENTS TO THE CLAIMS

1. (Currently amended) An oral phototherapy apparatus comprising:
a body sized and shaped so as to fit at least partially in a user's mouth; and
~~a first at least one~~ radiation emitting element coupled to the body to ~~selectively~~ irradiate a
~~plurality of regions~~ one or more regions of the oral cavity with phototherapeutic radiation ~~along~~
~~multiple predetermined directions~~;
wherein the apparatus further comprises a motion sensor and controller which controls
the at least one radiation emitting element based on signals from the motion sensor.
2. (Currently Amended) The apparatus of claim 1 wherein the apparatus further comprises
~~at least a first and second radiation emitting element~~ elements emitting light in first and second
directions respectively ~~a direction other than the predetermined directions of the first radiation~~
~~emitting element.~~
3. (Original) The apparatus of claim 1 wherein the apparatus further comprises an optical
element for directing radiation in different directions.
4. (Original) The apparatus of claim 1 wherein the apparatus is configured to direct radiation to
at least one portion of the oral cavity selected from the group of a tooth, cheek, tongue, palate,
throat and facial tissue, lymphatic tissue, blood, gland, follicle, collagen and pigmentation.
5. (Original) The apparatus of claim 1 wherein the emitter further comprises at least two
sources of radiation to be transmitted in different directions.
6. (Currently amended) The apparatus of claim 1 wherein the ~~first~~ at least one radiation
emitting element further comprises a source of radiation having wavelength components in at
least two separate spectral bands.

7. (Currently amended) The apparatus of claim 1 wherein the ~~first~~ at least one radiation emitting element further comprises at least two sources of radiation emitting different spectral bands of radiation.

8. (Original) The apparatus of claim 1 wherein the apparatus further comprises a controller for controlling at least one parameter for irradiation of the oral cavity selected from the group of wavelength, power, pulsewidth and treatment time.

9. (Currently Amended) The apparatus of claim 1 wherein the ~~first~~ at least one radiation emitting element further comprises at least one radiation source selected from the group of light-emitting diodes, superluminescent diodes, laser diodes, vertical cavity surface emitting lasers, fiber lasers, fluorescent solid-state sources, and lamps.

10. (Original) The apparatus of claim 1 wherein the apparatus further comprises a plurality of bristles.

11. (Original) The apparatus of claim 10 wherein the bristles are substantially transparent to phototherapeutic radiation within at least one wavelength range.

12. (Currently Amended) The apparatus of claim 10 wherein the bristles are coupled to the ~~first~~ at least one radiation emitting element to receive and propagate radiation therefrom.

13. (Original) The apparatus of claim 10 wherein the bristles are at least partially coated with a reflective material.

14. (Previously presented) The apparatus of claim 10 wherein the bristles have at least one shape, relative to an elongated direction of the bristles, selected from the group of conical, tapered, curved and spiral shapes.

15. (Original) The apparatus of claim 10 wherein the bristles are shaped to transmit radiation upon contact between the bristles and a portion of the oral cavity

16. (Original) The apparatus of claim 10 wherein the bristles further comprise one or more fluorescent, luminescent or lasing elements.

17. (Original) The apparatus of claim 10 wherein the bristles are incorporated into a brush head, which is removable and replaceable.

18. (Currently Amended) The apparatus of claim 10 wherein the bristles are optically transmissive and coupled to at least one of the first at least one radiation emitting element to receive and transmit radiation.

19. (Currently Amended) The apparatus of claim 1 wherein the apparatus further comprises a plurality of bristles and at least a portion of radiation from the ~~first~~ at least one radiation emitting element is emitted in a direction which is not parallel to the bristles.

20. (Previously presented) The apparatus of claim 18 wherein the light refractive characteristics of the optically transmissive bristles are selected to inhibit light transmission to the oral cavity in the absence of contact between the bristle and a surface of the teeth or cavity.

21. (Cancelled)

22. (Currently amended) The apparatus of claim 1 wherein the apparatus further comprises a contact sensor ~~and controller which~~ , wherein the controller controls the ~~radiation emitter~~ at least one radiation emitting element based on signals from the contact sensor.

23. (Currently amended) The apparatus of claim 1 wherein the apparatus further comprises an diagnostic sensor ~~and controller which~~ , wherein the controller controls the ~~radiation emitter~~ at least one radiation emitting element based on signals from the diagnostic sensor.

24. (Original) The apparatus of claim 1 wherein the apparatus further comprises at least one thermally conductive element for extracting heat from the emitter.
25. (Original) The apparatus of claim 24 wherein the thermally conductive element comprises a fluid heat transfer medium.
26. (Original) The apparatus of claim 24 wherein the apparatus further comprises a handle that serves as a heat sink.
27. (Original) The apparatus of claim 24 wherein the thermally conductive element comprises a phase change material.
28. (Original) The apparatus of claim 24 wherein the apparatus further comprises a heat transfer element for heating a portion of the oral cavity with waste heat from the apparatus.
29. (Original) The apparatus of claim 1 wherein the apparatus further comprises a light diffuser optically coupled to the radiation emitting element to deliver diffuse radiation to the oral cavity.
30. (Previously presented) The apparatus of claim 29 wherein said light diffuser comprises an optically transmissive element with a partially etched cladding.
31. (Original) The apparatus of claim 1 wherein the body is sized and shaped so as to fit at least partially in a user's mouth and adapted to conform to the shape of at least a portion of the oral cavity.
32. (Original) The apparatus of claim 31 wherein the body is compliant to facilitate conformation to a portion of the oral cavity.

33. (Original) The apparatus of claim 31 wherein apparatus further comprises a body in the form of a mouthpiece adapted for positioning between at least a user's teeth and gums during phototherapy.

34. (Original) The apparatus of claim 31 wherein the apparatus further comprises a body adapted for placement in a position covering at least a portion of a user's lips during phototherapy.

35. (Original) The apparatus of claim 1 wherein the apparatus further comprises a body adapted for placement in a fixed position relative to the oral cavity during phototherapy.

36. (Previously presented) The apparatus of claim 1 wherein the apparatus is configured such that, upon disposition of the applicator within the mouth, radiation from the emitter can penetrate the mucosal lining of the oral cavity and deliver phototherapeutic energy to a region of facial tissue.

37. (Original) The apparatus of claim 1 wherein the apparatus further comprises an ultrasound generator for delivering acoustic energy to a target tissue site.

38. (Original) The apparatus of claim 1 wherein the apparatus further comprises a vibrating element for applying intermittent pressure to a target tissue site.

39. (Original) The apparatus of claim 1 wherein the apparatus further comprises a drug delivery port.

40. (Original) The apparatus of claim 1 wherein the apparatus further comprises an energy reflector for redirecting phototherapeutic radiation towards a target tissue site.